

WHAT IS CLAIMED IS:

1. A name/address translation device
comprising:

- 5 a judging unit for judging, when receiving a
query, transmitted from a communication source,
about an address corresponding to a name of a
communication destination, whether a communication
between the communication source and a
10 communication destination is permitted or not, on
the basis of network types to which the
communication source and the communication
destination respectively belong;
- a second judging unit for judging based on a
15 result of the judgment by the judging unit whether
or not a communication destination address
corresponding to the name is given as a response to
the communication source; and
- a response unit for acquiring, when the second
20 judging unit judges that the address of the
communication destination is given as the response,
the address of the communication destination and
giving the address of the communication destination
as the response to the communication source.

25

2. A name/address translation device
comprising:

a receiving unit for receiving a query about a communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second
5 network;

an identifying unit for identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

10 a searching unit for searching for an address of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to
15 the second network; and

a sending unit for sending the response containing the address of the communication destination,

wherein the sending unit, when the
20 communication source belongs to the second network and when the communication destination belongs to the first network, does not send the response containing the address of the communication destination.

25

3. A name/address translation device according to Claim 2, wherein the sending unit,

when there is no application of which a use is permitted in a communication between the communication source belonging to the first network and the communication destination belonging to the second network, does not give the response of the communication destination address to the communication source.

4. A name/address translation device according to Claim 2 or 3, further comprising notifying unit for notifying a routing device of passage information for letting data pass through that are forwarded between a first terminal and a second terminal, the routing device receiving, when a response of an address of the second terminal corresponding to the communication destination belonging to the second network is given to the first terminal corresponding to the communication source belonging to the first network, pieces of data forwarded between the first network and the second network and letting only the data with its passage permitted pass through, and effecting an address translation between the first network and the second network.

25

5. A name/address translation device according to Claim 4, wherein the notifying unit,

when the routing device lets the data transmitted from the second terminal pass through, notifies the routing device of passage information containing an address of the first network that is virtually
5 assigned to the second terminal and an on-the-second-network address of the second terminal in order to translate the on-the-second-network address of the second terminal that is added as a source address to this piece of data into an on-
10 the-first network address, and

the sending unit, when the first terminal adds the on-the-first-network address of the second terminal to the data addressed to the second terminal and thus transmits it and when the routing
15 device lets the data addressed to the second terminal pass through, sends a response containing the one-the-first-network address of the second terminal in order to translate the destination address added to this piece of data into the on-
20 the-second-network address of the second terminal.

6. A name/address translation device according to Claim 4 or 5, wherein the notifying unit notifies the routing device of the passage
25 information further containing information about an application of which the utilization is permitted in the communication between the first terminal and

the second terminal in order for the routing device to let only the data pass through which is based on the application of which the utilization is permitted between the first terminal and the second
5 terminal.

7. A name/address translation device according to any one of Claims 4-6, wherein the notifying unit notifies, before the sending unit
10 sends the address of the second terminal, the routing device of the passage information.

8. A name/address translation method making a computer functioning as a name/address translation
15 device, execute:

a judging step of judging, when receiving a query, transmitted from a communication source, about an address corresponding to a name of a communication destination, whether a communication
20 between a communication source and a communication destination is permitted or not, on the basis of network types to which the communication source and the communication destination respectively belong;

a second judging step of judging based on a
25 result of the judgment in the judging step whether or not a communication destination address corresponding to the name is given as a response to

the communication source; and

a response step of acquiring, when it is judged in the second judging step that the address of the communication destination is given as the response, the address of the communication destination and giving the address of the communication destination as the response to the communication source.

10 9. A name/address translation method making a computer functioning as a name/translation device, execute:

a receiving step of receiving a query about a communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second network;

an identifying step of identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

a searching step of searching for an address of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to the second network; and

a sending step of sending the response containing the address of the communication destination,

wherein when the communication source belongs
5 to the second network and when the communication destination belongs to the first network, the response containing the address of the communication destination is not sent.

10 10. A name/address translation method according to Claim 9, wherein the computer, when there is no application of which a use is permitted in a communication between the communication source belonging to the first network and the
15 communication destination belonging to the second network, does not give the response of the communication destination address to the communication source.

20 11. A name/address translation method according to Claim 9 or 10, wherein the computer further executes a notifying step of notifying a routing device of passage information for letting data pass through that are forwarded between a
25 first terminal and a second terminal, the routing device receiving, when a response of an address of the second terminal corresponding to the

communication destination belonging to the second network is given to the first terminal corresponding to the communication source belonging to the first network, pieces of data forwarded
5 between the first network and the second network and letting only the data with its passage permitted pass through, and effecting an address translation between the first network and the second network.

10

12. A name/address translation method according to Claim 11, wherein the computer, when the routing device lets the data transmitted from the second terminal pass through, notifies the
15 routing device of passage information containing an address of the first network that is virtually assigned to the second terminal and an on-the-second-network address of the second terminal in order to translate the on-the-second-network
20 address of the second terminal that is added as a source address to this piece of data into an on-the-first network address, and

the computer, when the first terminal adds the on-the-first-network address of the second terminal
25 to the data addressed to the second terminal and thus transmits it and when the routing device lets the data addressed to the second terminal pass

through, sends a response containing the one-the-
first-network address of the second terminal in
order to translate the destination address added to
this piece of data into the on-the-second-network
5 address of the second terminal.

13. A name/address translation method
according to Claim 11 or 12, wherein the computer
notifies the routing device of the passage
10 information further containing information about an
application of which the utilization is permitted
in the communication between the first terminal and
the second terminal in order for the routing device
to let only the data pass through which is based on
15 the application of which the utilization is
permitted between the first terminal and the second
terminal.

14. A name/address translation method
20 according to any one of Claims 11-13, wherein the
computer notifies, before sending the address of
the second terminal, the routing device of the
passage information.

25 15. A program making a computer function as a
name/address translation device or a recording
medium recorded with this program, making the

computer execute:

- 5 a judging step of judging, when receiving a query, transmitted from a communication source, about an address corresponding to a name of a communication destination, whether a communication between a communication source and a communication destination is permitted or not, on the basis of network types to which the communication source and the communication destination respectively belong;
- 10 a second judging step of judging based on a result of the judgment in the judging step whether or not a communication destination address corresponding to the name is given as a response to the communication source; and
- 15 a response step of acquiring, when it is judged in the second judging step that the address of the communication destination is given as the response, the address of the communication destination and giving the address of the
- 20 communication destination as the response to the communication source.

- 16. A program making a computer function as a name/address translation device or a recording
- 25 medium recorded with this program, making the computer execute:

- a receiving step of receiving a query about a

communication destination address corresponding to a communication destination name, the query being transmitted from a first network and a second network;

5 an identifying step of identifying networks to which a communication source having transmitted the query and the communication destination respectively belong;

 a searching step of searching for an address
10 of the communication destination to be given to the communication source as a response when the communication source belongs to the first network and when the communication destination belongs to the second network; and

15 a sending step of sending the response containing the address of the communication destination,

 wherein when the communication source belongs to the second network and when the communication
20 destination belongs to the first network, a step of not sending the response containing the address of the communication destination is executed.

 17. A program or a recording medium recorded
25 with this program according to Claim 16, wherein the computer, when there is no application of which a use is permitted in a communication between the

communication source belonging to the first network
and the communication destination belonging to the
second network, executes a step of judging that the
response of the communication destination address
5 is not given to the communication source.

18. A program or a recording medium recorded
with this program according to Claim 16 or 17,
wherein the computer further executes a notifying
10 step of notifying a routing device of passage
information for letting data pass through that are
forwarded between a first terminal and a second
terminal, the routing device receiving, when a
response of an address of the second terminal
15 corresponding to the communication destination
belonging to the second network is given to the
first terminal corresponding to the communication
source belonging to the first network, pieces of
data forwarded between the first network and the
20 second network and letting only the data with its
passage permitted pass through, and effecting an
address translation between the first network and
the second network.

25 19. A program or a recording medium recorded
with this program according to Claim 18, wherein
the computer, when the routing device lets the data

transmitted from the second terminal pass through,
executes:

a step of notifying the routing device of
passage information containing an address of the
5 first network that is virtually assigned to the
second terminal and an on-the-second-network
address of the second terminal in order to
translate the on-the-second-network address of the
second terminal that is added as a source address
10 to this piece of data into an on-the-first network
address, and

a step of, when the first terminal adds the
on-the-first-network address of the second terminal
to the data addressed to the second terminal and
15 thus transmits it and when the routing device lets
the data addressed to the second terminal pass
through, sending a response containing the one-the-
first-network address of the second terminal in
order to translate the destination address added to
20 this piece of data into the on-the-second-network
address of the second terminal.

20. A program or a recording medium recorded
with this program according to Claim 18 or 19,
25 wherein the computer executes a step of notifying
the routing device of the passage information
further containing information about an application

of which the utilization is permitted in the
communication between the first terminal and the
second terminal in order for the routing device to
let only the data pass through which is based on
5 the application of which the utilization is
permitted between the first terminal and the second
terminal.

21. A program or a recording medium recorded
10 with this program according to any one of Claims
18-20, wherein the computer executes a step of
notifying, before sending the address of the second
terminal in the sending step, the routing device of
the passage information.

15